What is claimed is:

1. Apparatus for delivering laser energy to a workpiece, comprising:

at least one laser energy source providing at least one laser beam;

a plurality of laser beam modules arranged to selectably steer said at least one laser beam to a plurality of target sub-areas on a workpiece, which together cover a target area, said plurality of laser beam modules being additionally operative to focus said at least one laser beam on said workpiece without an intervening f-theta lens.

2. Apparatus for delivering laser energy to a workpiece as claimed in claim 1 and wherein said at least one laser energy source comprises a laser and a laser beam splitter operative to convert an output of said laser into a plurality of laser beams.

3. Apparatus for delivering laser energy to a workpiece as claimed in claim 1 and wherein said at least one laser energy source comprises a laser and a laser beam director operative to receive an output of said laser and to provide a plurality of individually directed laser beams.

4. Apparatus for delivering laser energy to a workpiece as claimed in claim 1 and wherein said laser energy source comprises a laser and an AOD operative to split an output of said laser into a selectable number of laser beams and to individually direct each laser beam to a selectable location.

5. Apparatus for delivering laser energy to a workpiece as claimed in claim 1 and wherein said laser beam modules comprise:

at least one laser beam steering module operative to steer at least one laser beam to a selectable location on said workpiece; and

at least one laser beam focusing optical module upstream of said at least one laser beam steering module operative to focus said at least one laser beam onto said workpiece.

6. Apparatus for delivering laser energy to a workpiece as claimed in claim 1 and wherein said laser beam modules comprise:

at least one laser beam steering module operative to steer at least one laser beam to a selectable location on said workpiece and to selectively extend or retract to compensate for an actual distance to said selectable location to thereby deliver said at least one laser beam in focus onto said workpiece.

7. Apparatus for delivering laser energy to a workpiece as claimed in claim 5 and wherein said at least one laser beam module comprises a plurality of laser beam steering modules arranged in an array, each laser beam steering module is operative to steer a laser beam to a selectable location in a corresponding target sub-area.

8. Apparatus for delivering laser energy to a workpiece as claimed in claim 7 and wherein each laser beam steering module is operative to steer a laser beam to a selectable location independent of other laser beam steering modules.

9. Apparatus for delivering laser energy to a workpiece as claimed in claim 7 and wherein an at least one laser beam focusing optical module operates in coordination with a corresponding laser beam steering module, and wherein said at

least one focusing optical module is operative to focus a laser beam onto said workpiece at said selectable location.

10. Apparatus for delivering laser energy to a workpiece as claimed in claim 8 and wherein said at least said one laser beam module comprises a plurality of laser beam steering modules and a corresponding plurality of laser beam focusing optical modules, and wherein each said at least one laser beam focusing optical module is operative to focus a laser beam to any selectable location in a corresponding target sub-area.

11. Apparatus for delivering laser energy to a workpiece as claimed in claim 7 and wherein said plurality of laser beam modules includes at least one redundant laser beam module.

12. Apparatus for delivering laser energy to a workpiece as claimed in claim 11 and wherein said at least one laser beam is pulsed and wherein:

during an initial pulse, a first laser beam steering module is operative to steer a laser beam in focus to a first selectable location, and

during a subsequent pulse, a second laser beam steering module is operative to steer at least one laser beam in focus to a second selectable location different from said first selectable location.

13. Apparatus for delivering laser energy to a workpiece as claimed in claim 5 and wherein said at least one laser beam steering module is arranged to selectably steer an at least one laser beam to said selectable location in a corresponding target sub-area, at least some selectable locations in said target sub-area being located at differing focusing distances from a corresponding at least one focusing optical module.

14. Apparatus for delivering laser energy to a workpiece, comprising:

at least one pulsed laser energy source operating at a pulse repetition rate and providing at least one pulsed laser beam;

a plurality of laser beam focusing optical modules arranged to selectably focus each of said at least one laser beam to a selected location on a workpiece, said plurality of laser beam focusing optical modules being of a number greater than said at least one laser beam, thereby to define at least one redundant laser beam focusing optical module.

15. Apparatus for delivering laser energy to a workpiece as claimed in claim 14 and wherein said at least one laser beam can be selectably directed to a selectable laser beam focusing optical module and wherein said redundancy in said plurality of laser beam focusing optical modules compensates for a difference between said pulse repetition rate and a cycle time of each of said laser beam focusing optical modules.

16. Apparatus for delivering laser energy to a workpiece as claimed in claim 14 and wherein, during a first pulse of said at least one pulsed laser energy source, a first laser beam focusing optical module is operative to focus a first pulsed laser beam onto said workpiece.

17. Apparatus for delivering laser energy to a workpiece as claimed in claim 16 and wherein during said first pulse a redundant laser beam focusing optical module is operative to be repositioned to a position required to focus a subsequent pulsed laser beam onto said workpiece, said subsequent pulsed laser beam to be output during a subsequent pulse of said at least one pulsed laser energy source.

18. Apparatus for delivering laser energy to a workpiece as claimed in claim 14 and wherein said at least one pulsed laser energy source is operative to provide a plurality of pulsed laser beams during each pulse.

19. Apparatus for delivering laser energy to a workpiece as claimed in claim 14 and wherein said at least one pulsed laser energy source is operative to provide a plurality of pulsed laser beams for each pulse, and said plurality of laser beam focusing optical modules includes an at least one redundant laser beam focusing optical module respective of each laser beam.

20. Apparatus for delivering laser energy to a workpiece as claimed in claim 14 and wherein a cycle time for configuring a laser beam focusing optical module to focus a laser beam onto said workpiece exceeds a time interval separating pulses of said at least one pulsed laser source.

21. Apparatus for delivering laser energy to a workpiece as claimed in claim 15 and wherein said at least one pulsed laser energy source comprises a deflector selectably deflecting said at least one pulsed laser beam.

22. Apparatus for delivering laser energy to a workpiece as claimed in claim 21 and wherein a cycle time of said deflector is less than a time interval between pulses of said pulsed laser source.

23. Apparatus for delivering laser energy to a workpiece as claimed in claim 22 and wherein during an initial pulse of said pulsed laser energy source said deflector is operative to deflect an initial laser beam to a first laser beam focusing

optical module, and during a next pulse said deflector is operative to deflect a next laser output to a redundant laser beam focusing optical module.

24. Apparatus for delivering laser energy to a workpiece as claimed in claim 14 and also comprising:

a plurality of laser beam steering modules downstream of said plurality of laser beam focusing optical modules for steering a laser beam to a selectable location on said workpiece.

25. Apparatus for delivering laser energy to a workpiece as claimed in claim 14 and wherein said laser beam focusing optical modules additionally provide a laser beam steering functionality for steering a laser beam to a selectable location on said workpiece, said laser beam focusing modules comprising a selectively pivoting mirror further operative to be extended or retracted to compensate for changes in distance to a flat surface resulting from a pivoting action.

26. Apparatus for delivering laser energy to a workpiece, comprising:

at least one laser energy source providing at least one laser beam;

a plurality of laser beam steering modules arranged to selectably steer said at least one laser beam to selectable locations on a target; and

a plurality of laser beam focusing optical modules associated with said laser beam steering modules for focusing a laser beam onto said workpiece.

27. Apparatus for delivering laser energy to a workpiece as claimed in claim 26 and wherein said plurality of laser beam steering modules comprises a number of laser beam steering

modules greater than said at least one laser beam, thereby to define at least one redundant laser beam steering module.

28. Apparatus for delivering laser energy to a workpiece as claimed in claim 26 and wherein said plurality of laser beam focusing optical modules comprises a number of laser beam focusing optical modules greater than said at least one laser beam, thereby to define at least one redundant laser beam focusing optical module.

29. Apparatus for delivering laser energy to a workpiece as claimed in claim 27 and wherein said at least one laser beam can be selectably directed to a selectable laser beam steering module, and wherein said redundancy in said plurality of laser beam steering modules compensates for a difference between said pulse repetition rate and a cycle time of each of said laser beam steering modules.

30. Apparatus for delivering laser energy to a workpiece as claimed in claim 26 and wherein said plurality of laser beam focusing optical modules comprises a number of laser beam focusing optical modules greater than said at least one laser beam, thereby to define at least one redundant laser beam focusing optical module.

31. Apparatus for delivering laser energy to a workpiece as claimed in claim 30 and wherein said at least one laser beam can be selectably directed to a selectable laser beam focusing optical module, and wherein said redundancy in said plurality of laser beam focusing optical modules compensates for a difference between a pulse repetition rate of said at least one laser beam and a cycle time of each of said laser beam focusing optical modules.

32. Apparatus for delivering laser energy to a workpiece as claimed in claim 26 and wherein said laser energy source is a pulsed laser energy source, and wherein during a first pulse of said at least one pulsed laser energy source, a first laser beam focusing optical module is operative to focus a first pulsed laser beam onto said workpiece.

33. Apparatus for delivering laser energy to a workpiece as claimed in claim 32 and wherein during said first pulse a redundant laser beam focusing optical module is operative to be repositioned to a position required to focus a subsequent pulsed laser beam onto said workpiece, said subsequent pulsed laser beam to be output during a subsequent pulse of said at least one pulsed laser energy source.

34. Apparatus for delivering laser energy to a workpiece as claimed in claim 33 and wherein said laser beam focusing module is located upstream of said beam steering module, said laser beam focusing module comprising at least one movable lens to focus said pulse laser onto said workpiece.

35. Apparatus for delivering laser energy to a workpiece as claimed in claim 33 and wherein said laser beam focusing module comprises at least one actuator in said at least one laser beam steering module, said actuator operative to move a portion of said laser beam steering module along an axis to compensate for changes in a length of an optical path as a function of steering said at least one laser beam.

36. Apparatus for delivering laser energy to a workpiece as claimed in claim 26 and wherein said at least one laser energy source is operative to provide a plurality of laser beams.

37. Apparatus for delivering laser energy to a workpiece as claimed in claim 26 and wherein said at least one laser energy source is operative to provide a plurality of laser beams, and said plurality of laser beam focusing optical includes an at least one redundant laser beam focusing optical module respective of each laser beam.

38. Apparatus for delivering laser energy to a workpiece as claimed in claim 32 and wherein a cycle time for configuring a laser beam focusing optical module to focus a laser beam onto said workpiece exceeds a time interval separating pulses of said at least one pulsed laser source.

39. Apparatus for delivering laser energy to a workpiece as claimed in claim 29 and wherein said at least one pulsed laser energy source comprises a deflector selectably deflecting said at least one pulsed laser beam.

40. Apparatus for delivering laser energy to a workpiece as claimed in claim 32 and wherein said at least one laser energy source comprises an acousto-optical deflector having cycle time that is less than a time interval between pulses of said pulsed laser source.

41. Apparatus for delivering laser energy to a workpiece as claimed in claim 40 and wherein during an initial pulse of said pulsed laser energy source said deflector is operative to deflect an initial laser beam to a first laser beam focusing optical module, and during a next pulse said deflector is operative to deflect a next laser output to a redundant laser beam focusing optical module.

42. Apparatus for delivering laser energy to workpiece, comprising:

a laser energy source providing at least two laser beams for delivering laser energy to a workpiece at least at two different locations;

at least two optical elements receiving said at least two laser beams, said at least two optical elements being operative to simultaneously independently control a beam parameter of each of said at least two laser beams; and

a laser beam steering assembly receiving said at least two laser beams and being operative to independently steer said at least two laser beams to independently selectable locations on an in-fabrication electrical circuit.

43. The apparatus claimed in claim 42 and wherein said laser beam source comprises a laser outputting at least one laser beam and a beam splitter receiving said at least one laser beam and outputting at least two laser beams.

44. The apparatus claimed in claim 43 and wherein said beam splitter comprises an acousto-optical deflector device.

45. The apparatus claimed in claim 43 and wherein said beam splitter is operative to output each of said at least two laser beams in independently selectable directions.

46. The apparatus claimed in claim 42 and wherein said laser energy source comprises a pulsed laser outputting a pulsed laser beam.

47. The apparatus claimed in claim 46 and wherein said pulsed laser comprises a Q-switched pulsed laser.

48. The apparatus claimed in claim 46 and wherein said pulsed laser outputs a laser beam in the ultra-violet spectrum.

49. The apparatus claimed in claim 42 and wherein said laser beam steering assembly comprises a plurality of laser beam steering modules.

50. The apparatus claimed in claim 49 and wherein said plurality of laser beam steering modules is arranged in a two dimensional array of laser beam steering modules.

51. The apparatus claimed in claim 49 and wherein said laser energy source is operative independently direct said laser beams to impinge on respective selected beam steering modules in said laser beam steering assembly.

52. The apparatus claimed in claim 42 and wherein said at least two optical elements comprises an array of lens modules.

53. The apparatus claimed in claim 52 and wherein said beam parameter is a focus parameter and said lens modules are operative to independently focus said at least two laser beams at respective independently selectable locations.

54. The apparatus claimed in claim 52 and wherein said array of lens modules is disposed between said laser beam source and said laser beam steering assembly.

55. The apparatus claimed in claim 54 and wherein each said lens module comprises at least one lens element being independently movable respective of a movable lens element in another lens module.

56. The apparatus claimed in claim 42 and wherein said at least two optical elements comprises an array of lens modules, each lens module in said array comprising an independently movable lens element.

57. The apparatus claimed in claim 56 and comprising a controller, said controller being operative to independently move movable lens elements among said at least two lenses to independently focus at least two laser beams among said plurality of laser beams at respective independently selectable locations.

58. The apparatus claimed in claim 57 and comprising a zoom lens element receiving said at least two laser beams and being operative to change a beam diameter property of said plurality of laser beams.

59. The apparatus claimed in claim 53 and wherein a laser beam is deliverable to an independently selectable location among a plurality of selectable locations within a target sub-area, and at least some independently selectable locations have different focus parameters.

60. The apparatus claimed in claim 59 and wherein at least two laser beams are delivered to corresponding selectable locations, each independent location being located a corresponding focusing distance from a beam steering assembly.

61. The apparatus claimed in claim 60 and wherein said lens modules are operative to focus each laser beams at an independently selectable location as a function of a corresponding focusing distance.

62. The apparatus claimed in claim 42 and wherein said at least two optical elements comprise at least two spatially positionable reflectors, wherein said beam steering assembly comprises at least two actuators coupled to each said at least two reflectors to independently pivot said at least two

reflectors, and wherein said at least two actuators are further operative to extend or retract said at least two reflectors to independently adjust a beam focus parameter of said at least two laser beams.

63. The apparatus claimed in claim 42 and wherein said at least two laser beams are operative to deliver laser energy to generate a via hole in an in-fabrication electrical circuit.

64. The apparatus claimed in claim 42 and wherein said at least two laser beams are operative to deliver laser energy to trim a passive electrical component in an in-fabrication electrical circuit.

65. The apparatus claimed in claim 42 and wherein said in-fabrication electrical circuit is an in-fabrication printed circuit board.

66. The apparatus claimed in claim 42 and wherein said electrical circuit is an in-fabrication integrated circuit.

67. The apparatus claimed in claim 42 and wherein said electrical circuit is an in-fabrication flat panel display.

68. The apparatus claimed in claim 42 and wherein said at least two laser beams are operative to deliver laser energy to anneal silicon in an in-fabrication electrical circuit.

69. The apparatus claimed in claim 68 and wherein said in-fabrication electrical circuit is an in-fabrication flat panel display.

70. The apparatus claimed in claim 42 and wherein said at least two laser beams are operative to deliver laser energy to

facilitate ion implantation in an in-fabrication electrical circuit.

71. The apparatus claimed in claim 70 and wherein said electrical circuit is an in-fabrication integrated circuit.

72. The apparatus claimed in claim 70 and wherein said electrical circuit is an in-fabrication flat panel display.

73. Apparatus for delivering laser energy to an electrical circuit substrate, comprising:

at least one laser beam source simultaneously outputting a plurality of laser beams;

a plurality of independently steerable laser beam deflectors disposed between said at least one laser beam source and said electrical circuit substrate to direct said plurality of laser beams to impinge on said electrical circuit substrate at independently selectable locations; and

focusing optics operative to focus said plurality of laser beams to different independently selectable locations without f-? optical elements.

74. The apparatus claimed in claim 73 and wherein said at least one laser beam source comprises a laser outputting a first laser beam, and at least one beam splitter splitting said first laser beam into said plurality of laser beams.

75. The apparatus claimed in claim 74 and wherein said beam splitter comprises an acousto-optical deflector.

76. The apparatus claimed in claim 75 and wherein said acousto-optical deflector is operative to split said first laser beam into said plurality of laser beams, and to direct each

laser beam to an independently selectable direction among a plurality of independently selectable locations.

77. The apparatus claimed in claim 73 and wherein said focusing optics comprises at least one movable optical element.

78. Apparatus for delivering laser energy to a substrate comprising:

at least one pulsed laser energy source providing at least one pulsed laser beam;

a plurality of laser beam steering modules arranged to selectably steer said at least one laser beam to selected locations on a target at differing focal lengths, said plurality of laser beam steering modules being of a number greater than said at least one laser beam, thereby to define at least one redundant beam steering module;

a plurality of laser beam automatic focusing optical modules upstream of said plurality of laser beam steering modules for automatically focusing a laser beam passing therethrough to a corresponding laser beam director module, to compensate for said differing focal lengths, said plurality of laser beam automatic focusing optical being of a number greater than said at least one laser beam, thereby to define at least one redundant laser beam automatic focusing optical module,

said redundancy in said plurality of laser beam director modules and said plurality of laser beam automatic focusing optical modules compensating for a difference between a pulse repetition rate of said at least one pulsed laser energy source and a cycle time of said automatic focusing optical module.

79. A dynamic beam splitter, comprising:

a beam deflector having a plurality of operative regions, the beam deflector being operative to receive a laser

beam at a first one of the plurality of operative regions and to provide a selectable number of output beam segments in response to a control input signal.

80. A dynamic beam splitter according to claim 79, wherein the control input signal comprises a sequence of pulses, each of the pulses controlling a respective one of the output beam segments.

81. A dynamic beam splitter according to claim 80, wherein each of the output beams has an energy parameter that is controlled by a characteristic of a respective one of the pulses.

82. A dynamic beam splitter according to claim 80, wherein each of the output beam segments is deflected by a respective deflection angle that is controlled by a characteristic of a respective one of the pulses.

83. A dynamic beam splitter according to claim 79, wherein each of the selectable number of output beam segments has substantially the same cross sectional configuration.

84. A dynamic beam splitter according to claim 79, wherein at least some of the selectable number of output beam segments have a controllable energy parameter.

85. A dynamic beam splitter according to claim 84, wherein the energy parameter is an energy density.

86. A dynamic beam splitter according to claim 85, wherein the energy density of the output beam segments is substantially uniform.

87. A dynamic beam splitter according to claim 85, wherein the energy density of the output beam segments is substantially not uniform.

88. A dynamic beam splitter according to claim 79, wherein the beam deflector is operative to direct the output beam segments in respective directions responsive to the control input signal.

89. A dynamic beam splitter according to claim 79, wherein the beam deflector comprises an acousto-optic deflector, and comprising a transducer, which is coupled to generate acoustic waves in the acousto-optic deflector in response to the control input signal so as to diffract the laser beam in each of the operative regions.

90. A dynamic beam deflector, comprising:

a beam deflector element having a plurality of operative regions, the beam deflector element being operative to receive an input laser beam at a first one of said plurality of operative regions and to provide a plurality of output beam segments output at least from one additional operative region, at least one output beam being independently deflected in response to a first control input signal.

91. A dynamic beam deflector according to claim 90, further comprising a beam redirector operative to receive a second output beam segment directed in a second direction from the first one of the plurality of operative regions and to direct the second output beam segment to second ones of the plurality of operative regions.

92. A dynamic beam deflector according to claim 91, wherein the beam redirector comprises a first mirror having a

plurality of regions, each region passing to said operative regions a portion of a redirected beam and reflecting to a parallel mirror a remaining portion of the redirected beam.

93. A dynamic beam deflector according to claim 92, wherein the output beam segments are mutually non-parallel.

94. A dynamic beam deflector according to claim 91, wherein the input laser beam has a spatial cross-section in the first one of the plurality of operative regions, and wherein the beam redirector comprises correction optics, which operate on the second output beam segment so the spatial cross section of a redirected second output beam segment is substantially similar to the spatial cross section of the input beam.

95. A dynamic beam deflector according to claim 91, wherein the beam deflector comprises an acousto-optic deflector, and comprising a transducer, which is coupled to generate acoustic waves in the acousto-optic deflector in response to the first control input signal so as to diffract the laser beam in each of the operative regions.

96. A dynamic beam deflector according to claim 90, wherein the first control input signal controls a beam direction of the first output beam.

97. A dynamic beam deflector according to claim 96, wherein the first control input signal has a frequency characteristic, which controls the beam direction.

98. A dynamic beam deflector according to claim 90, wherein the first control input signal has an amplitude characteristic, which controls an energy parameter of the first output beam.

99. A method for splitting a laser beam, comprising:

providing a beam deflector having a plurality of operative regions;

receiving a laser beam at a first one of the operative regions; and

applying a control input signal to the beam deflector so as to generate a selectable number of output beam segments, at least one output beam being output from a second operative region.

100. The method claimed in claim 99, wherein applying the control input signal comprises applying a sequence of pulses, each of the pulses controlling a respective one of the output beam segments.

101. The method claimed in claim 100, wherein controlling the respective one of the output beam segments comprises controlling an energy parameter of each of the output beam by varying a characteristic of a pulses.

102. The method claimed in claim 100, wherein controlling the respective one of the output beam segments comprises deflecting each of the output beams by a respective deflection angle by varying a characteristic of at least one pulses.

103. The method claimed in claim 100, wherein each of the selectable number of output beam segments has substantially the same cross sectional configuration.

104. The method claimed in claim 100, wherein applying the control input signal comprises directing the output beam segments in respective directions responsive to the control input signal.

105. The method claimed in claim 100, wherein the beam deflector comprises an acousto-optic element, and wherein applying the control input signal comprises generating acoustic waves in the acousto-optic element in response to the control input signal so as to diffract the laser beam in each of the operative regions.

106. A method of manufacturing an electrical circuit, comprising:

providing a beam deflector having a plurality of operative regions;

receiving a laser beam at a first one of the operative regions;

applying a control input signal to the beam deflector so as to generate a selectable number of output beam segments, at least one output beam being output from a second operative region; and

delivering at least one of said output beam segments to an in-fabrication electrical circuit substrate to perform an electrical circuit fabrication operation thereon.

107. The method claimed in claim 106, wherein applying the control input signal comprises applying a sequence of pulses, each of the pulses controlling a respective one of the output beam segments.

108. The method claimed in claim 107, wherein controlling a respective one of the output beam segments comprises controlling an energy parameter of each output beam segment by varying a characteristic of a control signal.

109. The method claimed in claim 107, wherein controlling a respective one of the output beam segments comprises deflecting

each output beam segment by a respective deflection angle by varying a characteristic of at least one pulse in a control signal.

110. The method claimed in claim 106, wherein each of the selectable number of output beam segments has substantially the same cross sectional configuration.

111. The method claimed in claim 107, wherein said applying a control input signal comprises directing the output beam segments in respective directions responsive to said control input signal.

112. The method claimed in claim 106, wherein said providing a beam deflector comprises providing a beam deflector having an acousto-optic element, and wherein applying a control input signal comprises generating acoustic waves in the acousto-optic element in response to the control input signal so as to diffract the laser beam in each of the operative regions.

113. A dynamic beam splitter, comprising:

a beam deflector being operative to receive a first input laser beam and to provide a plurality of output beam segments, at least some of said output beams having a mutually different energy fluence, in response to a control input signal.

114. A method for delivering laser energy to a workpiece, comprising:

providing at least two laser beams;

selectably steering said at least two laser beams to a plurality of target sub-areas on a workpiece, together covering a target area on a workpiece; and

independently focusing said at least two laser beams on said workpiece without an intervening f-theta lens between a beam steering device and said target area.

115. The method claimed in claim 114 and wherein said providing at least two laser beams comprises:

converting an output of a laser beam into at least two laser beam segments.

116. The method claimed in claim 114 and wherein said providing at least two laser beams comprises:

supplying a laser beam to a laser beam director; and

outputting a plurality of individually directed laser beams.

117. The method claimed in claim 114 and wherein said providing at least two laser beams comprises:

supplying a laser beam to an acousto-optical device (AOD);

splitting said laser beam into a selectable number of laser beam segments; and

individually directing each laser beam segment to a selectable location.

118. The method claimed in claim 114 and wherein said selectably steering comprises:

receiving each laser beam at a laser beam steering module; and

pivoting a reflector associated with said laser beam steering module to steer a laser beam to a selectable location on said workpiece.

119. The method claimed in claim 118 and wherein said independently focusing comprises:

receiving each laser beam at a focusing optical module upstream of a laser beam steering module;

moving an optical element in said focusing optical module to focus a laser beam onto said workpiece.

120. The method claimed in claim 118 and wherein said independently focusing comprises:

moving said reflector along an axis to compensate for an actual distance to said selectable location to deliver said at least one laser beam in focus onto said workpiece.

121. The method claimed in claim 118 and wherein said receiving each laser beam at a laser beam steering module comprises:

receiving each laser beam at a laser beam steering module in an array of laser beam steering modules, said steering module providing said selectable steering functionality.

122. The method claimed in claim 121 and wherein said selectably steering comprises steering a laser beam to a selectable location independent of other laser beams.

123. The method claimed in claim 121 and further comprising:

focusing a laser beam coordination with said selectably steering said laser beam such that said laser beam is delivered in focus onto said workpiece at said selectable location.

124. The method claimed in claim 118 and wherein said receiving each laser beam at a focusing optical module comprising:

receiving each laser beam at a focusing optical module in an array of focusing optical modules, each focusing optical module corresponding to a laser beam steering module in an array of laser beam steering modules;

steering each laser beam to a selectable location in a target sub-area; and

delivering each laser beam in focus to each said selectable location.

125. The method claimed in claim 118 and further comprising:

not receiving any laser beam at at least one redundant laser beam steering module.

126. The method claimed in claim 118 and further comprising:

not receiving any laser beam at at least one redundant focusing optical module.

127. The method claimed in claim 125 and further comprising:

not receiving any laser beam at at least one redundant focusing optical module.

128. The method claimed in claim 127 and wherein said providing at least two laser beams comprises:

providing at least two pulsed ser beams;

during an initial pulse, steering a first laser beam in focus to a first selectable location, and

during a subsequent pulse, steering a second laser beam in focus to a second selectable location different from said first selectable location.

129. The method claimed in claim 118 and wherein said selectably steering further comprises:

steering at laser one laser beam to a selectable location in a target sub-area, at least some selectable locations in said target sub-area being located at differing focusing distances from a corresponding focusing optical module.

130. A method for delivering laser energy to a workpiece, comprising:

providing at least one pulsed laser beam being pulsed at a pulse repetition rate; and

focusing said at least one pulsed laser beam at to be in focus at a selected location on a workpiece, said focusing being performed by a plurality of laser beam focusing optical modules being of a number greater than said at least one pulsed laser beam, thereby to define at least one redundant laser beam focusing optical module.

131. The method claimed in claim 130, comprising:

selectably directing said at least one pulsed laser beam to a selected laser beam focusing optical module, said redundancy in said plurality of laser beam focusing optical modules compensating for a difference between said pulse repetition rate and a cycle time of each of said laser beam focusing optical modules.

132. The method claimed in claim 130, comprising:

focusing a first pulsed laser beam to a selected location on said workpiece during a first pulse of said at least one pulsed laser beam.

133. The method claimed in claim 132, comprising:

repositioning a redundant laser beam focusing optical module during a first pulse to a position required to focus a

subsequent pulsed laser beam to a selected location on said workpiece, said subsequent pulsed laser beam corresponding to at least one subsequent pulse of said pulsed laser beam.

134. The method claimed in claim 130 and wherein said providing at least one pulsed laser beam comprises providing a plurality of pulsed laser beams during each pulse.

135. The method claimed in claim 130 and wherein said providing at least one pulsed laser beam comprises providing a plurality of pulsed laser beams for each pulse, and wherein said plurality of laser beam focusing optical modules includes an at least one redundant laser beam focusing optical module respective of each laser beam.

136. The method claimed in claim 130 and wherein a cycle time for configuring a laser beam focusing optical module to focus a laser beam onto said workpiece exceeds a time interval separating pulses of said at least one pulsed laser beam.

137. The method claimed in claim 131 and wherein said selectably directing said at least one laser beam comprises selectably deflecting said at least one pulsed laser beam at an acousto-optical deflector.

138. The method claimed in claim 137 and wherein a cycle time of said deflector is less than a time interval between pulses of said pulsed laser beam.

139. The method claimed in claim 138 and wherein said selectably deflecting comprises deflecting an initial laser beam to a first laser beam focusing optical module during an initial pulse of said pulsed laser beam, and then selectably deflecting

a subsequent laser beam to a redundant focusing optical module during a subsequent pulse of said pulsed laser beam.

140. The method claimed in claim 130 and also comprising:

steering each said at least one laser beam to a selectable location on said workpiece, said steering being performed downstream of said focusing.

141. The method claimed in claim 130 and also comprising:

steering each said at least one laser beam to a selectable location on said workpiece, said focusing and steering being performed by mirror operative to be pivoted and to be extended or retracted to compensate for changes in distance to a flat surface resulting from a pivoting action.

142. A method for delivering laser energy to a workpiece, comprising:

providing at least two laser beams;

selectably steering each said at least two laser beams to independently selectable locations on a target; and

independently focusing each said at least two laser beams onto said target.

143. The method claimed in claim 142 and wherein said selectably steering is performed by a plurality of laser beam steering modules comprising a number of laser beam steering modules greater than said at least two laser beams, thereby defining at least one redundant laser beam steering module.

144. The method claimed in claim 142 and wherein said independently focusing is performed by a plurality of laser beam focusing optical modules comprising a number of laser beam focusing optical modules greater than said at least two laser

beams, thereby to define at least one redundant laser beam focusing optical module.

145. The method claimed in claim 143 and wherein said providing at least two laser beams comprises selectably directing said at least two laser beams to selectable laser beam steering modules, and wherein said at least two redundant laser beam steering module compensates for a difference between a pulse repetition rate of said at least two laser beams and a cycle time of each of said laser beam steering modules.

146. The method claimed in claim 144 and wherein said providing at least two laser beams comprises selectably directing said at least two laser beams to selectable laser beam focusing optical modules, and wherein said redundancy in said plurality of laser beam focusing optical modules compensates for a difference between a pulse repetition rate of said at least two laser beams and a cycle time of each of said laser beam focusing optical modules.

147. The method claimed in claim 142 and wherein said at least two laser beams are pulsed laser beams, and comprising focusing a first laser beam onto said workpiece during a first pulse.

148. The method claimed in claim 147 and comprising repositioning a redundant laser beam focusing optical module during a first pulse to a position required to focus a subsequent pulsed laser beam onto said workpiece at a subsequent selectable location, said subsequent pulsed laser beam to be output during a subsequent pulse.

149. The method claimed in claim 148 and wherein said focusing is performed by at least one movable lens upstream of said steering.

150. The method claimed in claim 148 and wherein said focusing is performed by moving a pivoting steering mirror along an axis to compensate for changes in a length of an optical path resulting from said steering.

151. The method claimed in claim 142 and wherein said providing at least two laser beams comprises providing at least three laser beams.

152. The method claimed in claim 147 and wherein a time for configuring a laser beam focusing optical module to focus a laser beam onto said workpiece exceeds a time interval separating pulses of said at least two pulsed beams.

153. The method claimed in claim 145 and wherein said providing at least two laser beams comprises supplying a first laser beam to a beam splitter and splitting said first laser beams into at least two output laser beams.

154. The method claimed in claim 153 and wherein said splitting comprises passing said first laser beam through an acousto-optical deflector (AOD), and generating an acoustic wave in said AOD operative to split said first laser beam into at least two laser beams.

155. The method claimed in claim 154 and wherein said generating an acoustic wave is performed in less time than a time interval between pulses of said pulsed laser source.

156. The method claimed in claim 154 and comprising deflecting at least two laser beams associated with a first laser beam pulse to a first and a second laser beam focusing optical modules in response to a first acoustic wave, and then deflecting at least two laser beams associated with a subsequent laser beam pulse to a third and a fourth laser beam focusing optical modules in response to a second acoustic wave.

157. A method for delivering laser energy to a workpiece, comprising:

providing at least two laser beams for delivering laser energy to a workpiece at least at two different locations;

simultaneously independently controlling a beam parameter of each of said at least two laser beams with at least two optical elements; and

independently steering said at least two laser beams to independently selectable locations on an in-fabrication electrical circuit.

158. The method claimed in claim 157 and wherein said providing at least two laser beams comprises outputting at least one laser beam and splitting said at least one laser beam into at least two laser beams.

159. The method claimed in claim 158 and wherein said splitting comprises splitting said at least one least one laser beam with an acousto-optical deflector device.

160. The method claimed in claim 158 and wherein said splitting comprises outputting each of said at least two laser beams in independently selectable directions.

161. The method claimed in claim 157 and wherein said providing at least two laser beams comprises providing at least two pulsed laser beams.

162. The method claimed in claim 161 and wherein said providing at least two pulsed laser beams comprises emitting at least one laser beam from a Q-switched pulsed laser.

163. The method claimed in claim 161 and wherein said providing at least two pulsed laser beams comprises supplying at least one ultra-violet laser beam.

164. The method claimed in claim 157 and wherein said independently steering comprises independently steering said laser beams with a plurality of laser beam steering modules.

165. The method claimed in claim 164 and wherein said plurality of laser beam steering modules is arranged in a two dimensional array of laser beam steering modules defining a laser beam steering assembly.

166. The method claimed in claim 164 and wherein providing at least two laser beams comprises independently directing said laser beams to impinge on respective selected beam steering modules in a laser beam steering assembly.

167. The method claimed in claim 157 and wherein said independently controlling comprises independently controlling a beam parameter with at least two optical elements disposed in an array of optical modules.

168. The method claimed in claim 167 and wherein said beam parameter is a focus parameter, and comprising independently

focusing said at least two laser beams at respective independently selectable locations.

169. The method claimed in claim 167 and wherein said controlling a beam parameter comprises directing said at least two laser beams to an array of optical modules disposed between a laser beam source and a laser beam steering assembly.

170. The method claimed in claim 169 and wherein controlling a beam parameter comprises moving a respective movable optical element in at least one optical module independently of optical elements in other optical modules.

171. The method claimed in claim 157 and wherein said independently controlling comprises directing each of said at least two laser beams to an optical module, and independently moving a movable optical element in at least one optical module.

172. The method claimed in claim 171 and wherein said independently moving a movable optical element comprises moving a lens element to independently focus a laser beams at a respective independently selectable location.

173. The method claimed in claim 172 and comprising passing said at least two laser beams through a zoom element operative to change a beam diameter property of said laser beams.

174. The method claimed in claim 168 and comprising delivering a laser beam to an independently selectable location among a plurality of selectable locations within a target sub-area, at least some independently selectable locations having different focus parameters.

175. The method claimed in claim 174 and comprising delivering said at least two laser beams to corresponding at least two independently selectable locations, each independently selectable location being located a corresponding focusing distance from a beam steering assembly.

176. The method claimed in claim 175 and wherein said independently focusing comprises focusing as a function of a corresponding focusing distance.

177. The method claimed in claim 157 and wherein said independently steering comprises pivoting a reflector and said independently controlling a beam parameter comprises independently moving a reflector along an axis.

178. The method claimed in claim 157 and wherein said delivering laser energy to a workpiece comprises generating a via hole in an in-fabrication electrical circuit.

179. The method claimed in claim 157 and delivering laser energy to a workpiece comprises trimming a passive electrical component in an in-fabrication electrical circuit.

180. The method claimed in claim 157 and wherein said in-fabrication electrical circuit is an in-fabrication printed circuit board.

181. The method claimed in claim 157 and wherein said electrical circuit is an in-fabrication integrated circuit.

182. The method claimed in claim 157 and wherein said electrical circuit is an in-fabrication flat panel display.

183. The method claimed in claim 157 and wherein delivering laser energy to a workpiece comprises annealing silicon in an in-fabrication electrical circuit.

184. The method claimed in claim 183 and wherein said in-fabrication electrical circuit is an in-fabrication flat panel display.

185. The method claimed in claim 157 and wherein delivering laser energy to a workpiece comprises heating a location on an in-fabrication electrical circuit to facilitate ion implantation.

186. The method claimed in claim 185 and wherein said electrical circuit is an in-fabrication integrated circuit.

187. The method claimed in claim 185 and wherein said electrical circuit is an in-fabrication flat panel display.

188. A method for delivering laser energy to an electrical circuit substrate, comprising:

simultaneously outputting a plurality of laser beams from a laser beam source;

independently steering said plurality of laser beams to impinge on said electrical circuit substrate at independently selectable locations; and

focusing said plurality of laser beams to different independently selectable locations without f-? optical elements.

189. The method claimed in claim 188 and wherein said simultaneously outputting comprises outputting a first laser beam, and splitting said first laser beam into said plurality of laser beams.

190. The method claimed in claim 189 and wherein said splitting comprises splitting said first laser beam with an acousto-optical deflector.

191. The method claimed in claim 190 and wherein said splitting comprises directing ones of said plurality of laser beams in independently selectable directions.

192. The method claimed in claim 188 and wherein said focusing comprises moving at least one optical element.

193. A method for delivering laser energy to a substrate comprising:

providing at least one pulsed laser beam;

selectably steering said at least one laser beam with a plurality of laser beam steering modules to selected locations on a target at differing focal lengths, said plurality of laser beam steering modules being of a number greater than said at least one laser beam, thereby defining at least one redundant beam steering module;

automatically focusing a laser beam with laser beam automatic focusing optical modules upstream of said plurality of laser beam steering modules to compensate for said differing focal lengths, said plurality of laser beam automatic focusing optical modules being of a number greater than said at least one laser beam, thereby defining at least one redundant laser beam automatic focusing optical module,

compensating for a difference between a pulse repetition rate of said at least one pulsed laser energy source and a cycle time of said automatic focusing optical module by said redundancy in said plurality of laser beam steering modules and said redundancy of laser beam automatic focusing optical modules.

194. A method for dynamically splitting a beam, comprising: receiving a laser beam at a first one of a plurality of operative regions in a beam deflector; and

outputting a selectable number of output beam segments from at least another operative region, in response to a control input signal.

195. A method according to claim 194, wherein said outputting comprises generating a control input signal having a sequence of pulses, each of the pulses controlling a respective output beam segments.

196. A method according to claim 195, wherein the output beam segments have an energy parameter that is controlled by a characteristic of at least one of the pulses.

197. A method according to claim 195, wherein the output beam segments are each deflected by a respective deflection angle, said deflection angle being controlled by a characteristic of a respective pulse.

198. A method according to claim 194, wherein said outputting comprises outputting a selectable number of output beam segments each having substantially the same cross sectional configuration.

199. A method according to claim 194, wherein said outputting comprises outputting a selectable number of output beam segments at least some output beam segments having a controllable energy parameter.

200. A method according to claim 199, wherein the energy parameter is an energy density.

201. A method according to claim 200, wherein the energy densities of the output beam segments are substantially uniform.

202. A method according to claim 200, wherein the energy densities of the output beam segments are substantially not uniform.

203. A method according to claim 194, said outputting comprises directing the output beam segments in selectable directions in response to the control input signal.

204. A method according to claim 194, wherein said outputting comprises generating acoustic waves in an acousto-optic deflector in response to the control input signal so as to diffract the laser beam at each of the operative regions.

205. A method for operating a beam splitter, comprising:

receiving an input laser beam at a first operative region in a beam deflector element having a plurality of operative regions; and

providing a plurality of output beam segments output from at least from one additional operative region, at least one output beam segment being independently deflected in response to a first control input signal.

206. A method according to claim 205, further comprising:

redirecting a beam segment output from the first operative region to additional ones of operative regions.

207. A method according to claim 206, wherein said redirecting comprises directing a redirected beam segment to a first mirror having a plurality of partially reflective regions, each partially reflective region passing to said beam deflector element a portion of said redirected beam segment and reflecting

to a parallel mirror a remaining portion of the redirected beam segment.

208. A method according to claim 207, wherein said providing a plurality of output beam segments comprises providing a plurality of mutually non-parallel output beam segments.

209. A method according to claim 206, wherein the input laser beam has a spatial cross-section in said first operative region, and comprising:

optically correcting a redirected beam segment so that its spatial cross section is substantially similar to the spatial cross section of the input laser beam.

210. A method according to claim 206, wherein said beam deflector element comprises an acousto-optic beam deflector, and wherein said providing a plurality of output beam segments comprises:

generating an acoustic wave in said acousto-optic beam deflector in response to a first control input signal to diffract the laser beam at one or more of said operative regions.

211. A method according to claim 205, wherein said first control input signal controls a beam direction of said output beam segments.

212. A method according to claim 211, wherein said first control input signal has a frequency characteristic controlling the beam direction.

213. A method according to claim 205, wherein said first control input signal has an amplitude characteristic controlling an energy parameter of at least one output beam segment.

214. A method for manufacturing an electrical circuit, comprising:

delivering laser energy to an electrical circuit substrate, said delivering including:

providing at least two laser beams;

selectably steering said at least two laser beams to a plurality of target sub-areas on said electrical circuit substrate, together covering a target area on said electrical circuit substrate; and

independently focusing said at least two laser beams on said electrical circuit substrate without an intervening f-theta lens between a beam steering device and said target area; and

performing at least one additional electrical circuit manufacturing operation on said electrical circuit substrate.

215. The method claimed in claim 214 and wherein said providing at least two laser beams comprises:

converting an output of a laser beam into at least two laser beam segments.

216. The method claimed in claim 214 and wherein said providing at least two laser beams comprises:

supplying a laser beam to a laser beam director; and

outputting a plurality of individually directed laser beams.

217. The method claimed in claim 214 and wherein said providing at least two laser beams comprises:

supplying a laser beam to an acousto-optical device (AOD);

splitting said laser beam into a selectable number of laser beam segments; and

individually directing each laser beam segment to a selectable location.

218. The method claimed in claim 214 and wherein said selectably steering comprises:

receiving each laser beam at a laser beam steering module; and

pivoting a reflector associated with said laser beam steering module to steer a laser beam to a selectable location on said electrical circuit substrate.

219. The method claimed in claim 218 and wherein said independently focusing comprises:

receiving each laser beam at a focusing optical module upstream of a laser beam steering module;

moving an optical element in said focusing optical module to focus a laser beam onto said electrical circuit substrate.

220. The method claimed in claim 218 and wherein said independently focusing comprises:

moving said reflector along an axis to compensate for an actual distance to said selectable location to deliver said at least one laser beam in focus onto said electrical circuit substrate.

221. The method claimed in claim 218 and wherein said receiving each laser beam at a laser beam steering module comprises:

receiving each laser beam at a laser beam steering module in an array of laser beam steering modules, said steering module providing said selectable steering functionality.

222. The method claimed in claim 221 and wherein said selectably steering comprises steering a laser beam to a selectable location independent of other laser beams.

223. The method claimed in claim 221 and further comprising:

focusing a laser beam in coordination with said selectably steering said laser beam such that said laser beam is delivered in focus onto said electrical circuit substrate at said selectable location.

224. The method claimed in claim 218 and wherein said receiving each laser beam at a focusing optical module comprising:

receiving each laser beam at a focusing optical module in an array of focusing optical modules, each focusing optical module corresponding to a laser beam steering module in an array of laser beam steering modules;

steering each laser beam to a selectable location in a target sub-area; and

delivering each laser beam in focus to each said selectable location.

225. The method claimed in claim 218 and further comprising:

not receiving any laser beam at at least one redundant laser beam steering module.

226. The method claimed in claim 218 and further comprising:

not receiving any laser beam at at least one redundant focusing optical module.

227. The method claimed in claim 225 and further comprising:

not receiving any laser beam at at least one redundant focusing optical module.

228. The method claimed in claim 227 and wherein said providing at least two laser beams comprises:

providing at least two pulsed laser beams;

during an initial pulse, steering a first laser beam in focus to a first selectable location, and

during a subsequent pulse, steering a second laser beam in focus to a second selectable location different from said first selectable location.

229. The method claimed in claim 218 and wherein said selectably steering further comprises:

steering at laser one laser beam to a selectable location in a target sub-area, at least some selectable locations in said target sub-area being located at differing focusing distances from a corresponding focusing optical module.

230. A method for manufacturing an electrical circuit, comprising:

delivering laser energy to selectable locations on an electrical circuit substrate, said delivering including:

providing at least one pulsed laser beam being pulsed at a pulse repetition rate; and

focusing said at least one pulsed laser beam at to be in focus at a selected location on an electrical circuit substrate, said focusing being performed by a plurality of laser beam focusing optical modules being of a number greater than said at least one pulsed laser beam, thereby to define at least one redundant laser beam focusing optical module; and

performing at least one additional electrical circuit manufacturing operation on said electrical circuit substrate.

231. The method claimed in claim 230, comprising:

selectably directing said at least one pulsed laser beam to a selected laser beam focusing optical module, said at least one redundant laser beam focusing optical module compensating for a difference between said pulse repetition rate and a cycle time of each of said laser beam focusing optical modules.

232. The method claimed in claim 230, comprising:

focusing a first pulsed laser beam to a selected location on said electrical circuit substrate during a first pulse of said at least one pulsed laser beam.

233. The method claimed in claim 232, comprising:

repositioning a redundant laser beam focusing optical module during a first pulse to a position required to focus a subsequent pulsed laser beam to a selected location on said electrical circuit substrate, said subsequent pulsed laser beam corresponding to at least one subsequent pulse of said pulsed laser beam.

234. The method claimed in claim 230 and wherein said providing at least one pulsed laser beam comprises providing a plurality of pulsed laser beams during each pulse.

235. The method claimed in claim 230 and wherein said providing at least one pulsed laser beam comprises providing a plurality of pulsed laser beams for each pulse, and wherein said plurality of laser beam focusing optical modules includes an at least one redundant laser beam focusing optical module respective of each laser beam.

236. The method claimed in claim 230 and wherein a cycle time for configuring a laser beam focusing optical module to focus a laser beam onto said electrical circuit substrate exceeds a time interval separating pulses of said at least one pulsed laser beam.

237. The method claimed in claim 231 and wherein said selectably directing said at least one laser beam comprises selectably deflecting said at least one pulsed laser beam at an acousto-optical deflector.

238. The method claimed in claim 237 and wherein a cycle time of said deflector is less than a time interval between pulses of said pulsed laser beam.

239. The method claimed in claim 238 and wherein said selectably deflecting comprises deflecting an initial laser beam to a first laser beam focusing optical module during an initial pulse of said pulsed laser beam, and then selectably deflecting a subsequent laser beam to a redundant focusing optical module during a subsequent pulse of said pulsed laser beam.

240. The method claimed in claim 230 and also comprising:

steering each said at least one laser beam to a selectable location on said electrical circuit substrate, said steering being performed downstream of said focusing.

241. The method claimed in claim 230 and also comprising:

steering each said at least one laser beam to a selectable location on said electrical circuit substrate, said focusing and steering being performed by mirror operative to be pivoted and to be extended or retracted to compensate for changes in distance to a flat surface resulting from a pivoting action.

242. A method for manufacturing an electrical circuit substrate, comprising:

delivering laser energy to an electrical circuit substrate, said delivering including:

providing at least two laser beams;

selectably steering each said at least two laser beams to independently selectable locations on a target; and

independently focusing each said at least two laser beams onto said target; and

performing at least one additional electrical circuit manufacturing operation on said electrical circuit substrate.

243. The method claimed in claim 242 and wherein said selectably steering comprises:

employing a plurality of laser beam steering modules to steer said at least two laser beams, said plurality of steering modules having a number of laser beam steering modules greater than said at least two laser beams, thereby defining at least one redundant laser beam steering module.

244. The method claimed in claim 242 and wherein said independently focusing comprises:

employing a plurality of laser beam focusing optical modules, said plurality of laser beam focusing optical modules having a number of laser beam focusing optical modules greater

than said at least two laser beams, thereby to define at least one redundant laser beam focusing optical module.

245. The method claimed in claim 243 and wherein said providing at least two laser beams comprises:

selectably directing said at least two laser beams to selectable laser beam steering modules, and wherein said at least two redundant laser beam steering module compensates for a difference between a pulse repetition rate of said at least two laser beams and a cycle time of each of said laser beam steering modules.

246. The method claimed in claim 244 and wherein said providing at least two laser beams comprises:

selectably directing said at least two laser beams to selectable laser beam focusing optical modules, and wherein said redundancy in said plurality of laser beam focusing optical modules compensates for a difference between a pulse repetition rate of said at least two laser beams and a cycle time of each of said laser beam focusing optical modules.

247. The method claimed in claim 242 and wherein said at least two laser beams are pulsed laser beams, and comprising:

focusing a first laser beam onto said electrical circuit substrate during a first pulse.

248. The method claimed in claim 247 and comprising:

repositioning a redundant laser beam focusing optical module during a first pulse to a position required to focus a subsequent pulsed laser beam onto said electrical circuit substrate at a subsequent selectable location, said subsequent pulsed laser beam to be output during a subsequent pulse.

249. The method claimed in claim 248 and wherein said focusing is performed by at least one movable lens upstream of said steering.

250. The method claimed in claim 248 and wherein said focusing is performed by moving a pivoting steering mirror along an axis to compensate for changes in a length of an optical path resulting from said steering.

251. The method claimed in claim 242 and wherein said providing at least two laser beams comprises providing at least three laser beams.

252. The method claimed in claim 247 and wherein a time for configuring a laser beam focusing optical module to focus a laser beam onto said electrical circuit substrate exceeds a time interval separating pulses of said at least two pulsed beams.

253. The method claimed in claim 245 and wherein said providing at least two laser beams comprises:

supplying a first laser beam to a beam splitter and splitting said first laser beams into at least two output laser beams.

254. The method claimed in claim 253 and wherein said splitting comprises:

passing said first laser beam through an acousto-optical deflector (AOD), and generating an acoustic wave in said AOD operative to split said first laser beam into at least two laser beams.

255. The method claimed in claim 254 and wherein said generating an acoustic wave is performed in less time than a time interval between pulses of said pulsed laser source.

256. The method claimed in claim 254 and comprising:

deflecting at least two laser beams associated with a first laser beam pulse to a first and a second laser beam focusing optical modules in response to a first acoustic wave, and then deflecting at least two laser beams associated with a subsequent laser beam pulse to a third and a fourth laser beam focusing optical modules in response to a second acoustic wave.

257. A method for manufacturing an electrical circuit substrate, comprising:

delivering laser energy to an electrical circuit substrate, said delivering including:

providing at least two laser beams for delivering laser energy to a electrical circuit substrate at least at two different locations;

simultaneously independently controlling a beam parameter of each of said at least two laser beams with at least two optical elements; and

independently steering said at least two laser beams to independently selectable locations on an in-fabrication electrical circuit; and

performing at least one additional electrical circuit manufacturing operation on said electrical circuit substrate.

258. The method claimed in claim 257 and wherein said providing at least two laser beams comprises:

outputting at least one laser beam and splitting said at least one laser beam into at least two laser beams.

259. The method claimed in claim 258 and wherein said splitting comprises:

splitting said at least one least one laser beam with an acousto-optical deflector device.

260. The method claimed in claim 258 and wherein said splitting comprises:

outputting each of said at least two laser beams in independently selectable directions.

261. The method claimed in claim 257 and wherein said providing at least two laser beams comprises providing at least two pulsed laser beams.

262. The method claimed in claim 261 and wherein said providing at least two pulsed laser beams comprises emitting at least one laser beam from a Q-switched pulsed laser.

263. The method claimed in claim 261 and wherein said providing at least two pulsed laser beams comprises supplying at least one ultra-violet laser beam.

264. The method claimed in claim 257 and wherein said independently steering comprises independently steering said laser beams with a plurality of laser beam steering modules.

265. The method claimed in claim 264 and wherein said plurality of laser beam steering modules is arranged in a two dimensional array of laser beam steering modules defining a laser beam steering assembly.

266. The method claimed in claim 264 and wherein said providing at least two laser beams comprises:

independently directing said laser beams to impinge on respective selected beam steering modules in a laser beam steering assembly.

267. The method claimed in claim 257 and wherein said independently controlling comprises:

independently controlling a beam parameter with at least two optical elements disposed in an array of optical modules.

268. The method claimed in claim 267 and wherein said beam parameter is a focus parameter, and comprising:

independently focusing said at least two laser beams at respective independently selectable locations.

269. The method claimed in claim 267 and wherein said controlling a beam parameter comprises:

directing said at least two laser beams to an array of optical modules disposed between a laser beam source and a laser beam steering assembly.

270. The method claimed in claim 269 and wherein said controlling a beam parameter comprises:

moving a respective movable optical element in at least one optical module independently of optical elements in other optical modules.

271. The method claimed in claim 257 and wherein said independently controlling comprises:

directing each of said at least two laser beams to an optical module, and independently moving a movable optical element in at least one optical module.

272. The method claimed in claim 271 and wherein said independently moving a movable optical element comprises:

moving a lens element to independently focus a laser beams at a respective independently selectable location.

273. The method claimed in claim 272 and comprising:

passing said at least two laser beams through a zoom element operative to change a beam diameter property of said laser beams.

274. The method claimed in claim 268 and comprising:

delivering a laser beam to an independently selectable location among a plurality of selectable locations within a target sub-area, at least some independently selectable locations having different focus parameters.

275. The method claimed in claim 274 and comprising:

delivering said at least two laser beams to corresponding at least two independently selectable locations, each independently selectable location being located a corresponding focusing distance from a beam steering assembly.

276. The method claimed in claim 275 and wherein said independently focusing comprises focusing as a function of a corresponding focusing distance.

277. The method claimed in claim 257 and wherein said independently steering comprises pivoting a reflector and said independently controlling a beam parameter comprises independently moving said reflector along an axis.

278. The method claimed in claim 257 and wherein said delivering laser energy to a electrical circuit substrate comprises generating a via hole in an in-fabrication electrical circuit.

279. The method claimed in claim 257 and delivering laser energy to a electrical circuit substrate comprises trimming a

passive electrical component in an in-fabrication electrical circuit.

280. The method claimed in claim 257 and wherein said in-fabrication electrical circuit is an in-fabrication printed circuit board.

281. The method claimed in claim 257 and wherein said electrical circuit is an in-fabrication integrated circuit.

282. The method claimed in claim 257 and wherein said electrical circuit is an in-fabrication flat panel display.

283. The method claimed in claim 257 and wherein delivering laser energy to a electrical circuit substrate comprises annealing silicon in an in-fabrication electrical circuit.

284. The method claimed in claim 283 and wherein said in-fabrication electrical circuit is an in-fabrication flat panel display.

285. The method claimed in claim 257 and wherein delivering laser energy to a electrical circuit substrate comprises heating a location on an in-fabrication electrical circuit to facilitate ion implantation.

286. The method claimed in claim 285 and wherein said electrical circuit is an in-fabrication integrated circuit.

287. The method claimed in claim 285 and wherein said electrical circuit is an in-fabrication flat panel display.

288. A method for manufacturing an electrical circuit substrate, comprising:

delivering laser energy to an electrical circuit substrate, said delivering including:

simultaneously outputting a plurality of laser beams from a laser beam source;

independently steering said plurality of laser beams to impinge on said electrical circuit substrate at independently selectable locations; and

focusing said plurality of laser beams to different independently selectable locations without f-? optical elements; and

performing at least one additional electrical circuit manufacturing operation on said electrical circuit substrate.

289. The method claimed in claim 288 and wherein said simultaneously outputting comprises outputting a first laser beam, and splitting said first laser beam into said plurality of laser beams.

290. The method claimed in claim 289 and wherein said splitting comprises splitting said first laser beam with an acousto-optical deflector.

291. The method claimed in claim 290 and wherein said splitting comprises directing ones of said plurality of laser beams in independently selectable directions.

292. The method claimed in claim 288 and wherein said focusing comprises moving at least one optical element.

293. A method for manufacturing an electrical circuit substrate comprising:

delivering laser energy to an electrical circuit substrate, said delivering including:

providing at least one pulsed laser beam;

selectably steering said at least one laser beam with a plurality of laser beam steering modules to selected locations on a target at differing focal lengths, said plurality of laser beam steering modules being of a number greater than said at least one laser beam, thereby defining at least one redundant beam steering module;

automatically focusing a laser beam with laser beam automatic focusing optical modules upstream of said plurality of laser beam steering modules to compensate for said differing focal lengths, said plurality of laser beam automatic focusing optical modules being of a number greater than said at least one laser beam, thereby defining at least one redundant laser beam automatic focusing optical module,

compensating for a difference between a pulse repetition rate of said at least one pulsed laser energy source and a cycle time of said automatic focusing optical module by said redundancy in said plurality of laser beam steering modules and said redundancy of laser beam automatic focusing optical modules; and

performing at least one additional electrical circuit manufacturing operation on said electrical circuit substrate.

294. A method for manufacturing an electrical circuit substrate, comprising:

delivering a dynamically split laser beam to an electrical circuit substrate, said delivering including:

receiving a laser beam at a first one of a plurality of operative regions in a beam deflector; and

outputting a selectable number of output beam segments from at least another operative region, in response to a control input signal; and

performing at least one additional electrical circuit manufacturing operation on said electrical circuit substrate.

295. A method according to claim 294, wherein said outputting comprises generating a control input signal having a sequence of pulses, each of the pulses controlling a respective output beam segments.

296. A method according to claim 295, wherein the output beam segments have an energy parameter that is controlled by a characteristic of at least one of the pulses.

297. A method according to claim 295, wherein the output beam segments are each deflected by a respective deflection angle, said deflection angle being controlled by a characteristic of a respective pulse.

298. A method according to claim 294, wherein said outputting comprises outputting a selectable number of output beam segments each having substantially the same cross sectional configuration.

299. A method according to claim 294, wherein said outputting comprises outputting a selectable number of output beam segments at least some output beam segments having a controllable energy parameter.

300. A method according to claim 299, wherein the energy parameter is an energy density.

301. A method according to claim 300, wherein the energy densities of the output beam segments are substantially uniform.

302. A method according to claim 300, wherein the energy densities of the output beam segments are substantially not uniform.

303. A method according to claim 294, said outputting comprises directing the output beam segments in selectable directions in response to the control input signal.

304. A method according to claim 294, wherein said outputting comprises generating acoustic waves in an acousto-optic deflector in response to the control input signal so as to diffract the laser beam at each of the operative regions.

305. A method for manufacturing an electrical circuit substrate, comprising:

delivering a plurality of laser beams to an electrical circuit substrate, said delivering including:

receiving an input laser beam at a first operative region in a beam deflector element having a plurality of operative regions; and

providing a plurality of output beam segments output from at least from one additional operative region, at least one output beam segment being independently deflected in response to a first control input signal; and

performing at least one additional electrical circuit manufacturing operation on said electrical circuit substrate.

306. A method according to claim 305, further comprising:

redirecting a beam segment output from the first operative region to additional ones of operative regions.

307. A method according to claim 306, wherein said redirecting comprises directing a redirected beam segment to a first mirror having a plurality of partially reflective regions,

each partially reflective region passing to said beam deflector element a portion of said redirected beam segment and reflecting to a parallel mirror a remaining portion of the redirected beam segment.

308. A method according to claim 307, wherein said providing a plurality of output beam segments comprises providing a plurality of mutually non-parallel output beam segments.

309. A method according to claim 306, wherein the input laser beam has a spatial cross-section in said first operative region, and comprising:

optically correcting a redirected beam segment so that its spatial cross section is substantially similar to the spatial cross section of the input laser beam.

310. A method according to claim 306, wherein said beam deflector element comprises an acousto-optic beam deflector, and wherein said providing a plurality of output beam segments comprises:

generating an acoustic wave in said acousto-optic beam deflector in response to a first control input signal to diffract the laser beam at one or more of said operative regions.

311. A method according to claim 305, wherein said first control input signal controls a beam direction of said output beam segments.

312. A method according to claim 311, wherein said first control input signal has a frequency characteristic controlling the beam direction.

313. A method according to claim 305, wherein said first control input signal has an amplitude characteristic controlling an energy parameter of at least one output beam segment.